R E P O R T R E S U M E S

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PLANNING AND CONSTRUCTION OF A UNIVERSITY COURSE IN EDUCATIONAL TECHNOLOGY.

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ECONOMIC, SOCIAL, AND POLITICAL CHANGES IN SOCIETY AT LARGE, AS WELL AS DEVELOPMENTS IN EDUCATIONAL IDEOLOGIES AND METHODS HAVE CREATED THE NEED FOR NEW UNIVERSITY COURSES IN THE FIELD OF PEDAGOGY. TO HELP MEET THIS NEED, A ONE-YEAR COURSE ON EDUCATIONAL TECHNOLOGY, WILL BE INTRODUCED AT THE UNIVERSITY OF GOTHENBURG, BEGINNING SPRING SEMESTER 1968. THE COURSE WILL GIVE THE STUDENTS AN INTRODUCTION TO EDUCATION IN RELATION TO THE STRUCTURE OF SOCIETY, AND TEACH METHODS TO DETERMINE EDUCATIONAL OBJECTIVES, PLANNING AND DESIGN OF INSTRUCTIONAL CRITERIA AND METHODS, SCIENTIFIC ANALYSIS AND EVALUATION. FINALLY, THE STUDENTS MUST PRACTICALLY APPLY AND INTEGRATE THE THEORETICAL CONTENT OF THE COURSE ON PROJECTS OF THEIR OWN. COURSE LITERATURE IS LISTED. (OH)

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SCHOOL RESEARCH

Current projects 1968:1

Project title: Planning and construction of a university course in Educational Technology

Conducted by: Institute of Education, University of Gothenburg

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Background

During rescent years, there has been a lively debate at the Institute of Education at Gothenburg on what kinds of services the educationists can offer to the community and the form of these active contributions. The outcome of this debate seems to suggest that within the science of education (pedagogics) two large new fields of application are beginning to develop.

One is a rapidly expanding type of activity referring to the qualitative and quantitative design of the educational system in relation to the overall planning of society. In this type of activity, educationists have to work in close collaboration with economists, social scientists, politicians, etc. The planning of education in this meaning comprises a continuous process of analysis and decision, in which the material consists of the economic, social and political components in a society in a state of unceasing development.

The other great field of activity is the planning of instruction and the arrangement of learning situations. In this context, instruction might be defined as goal-directed and systematic modification of behaviour. The goals, principles and dimensions of education, obtained as a product of community planning, must be broken down step by step to be transferred by way of instruction to desired changes in the behaviour of the members of society.

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Not least the development in programmed and so-called pre-produced instruction has given rise to radically changed views on such questions as defining objectives, steering and controlling the quality of instruction. The whole of this process, from the analyses made by the educational planner on the macro level to the construction of the shortest instructional sequence must be well synchronised. We have chosen to call that part of education concerned with the application and development of methods to effectuate this developmental process "Educational Technology". It should already be clear that this field of work has become so comprehensive that a differentiation of the functions can be discerned. The first phases of this process seem to coincide well with the concept Educational Planning, while the others correspond most closely to what we mean when we speak of Instructional Planning and Instructional Technology.

The boundary between Educational Planning and the Instructional Planning if often diffuse, as these terms are applied to parts of the same process.

It was on this background that the Institute of Education deemed it urgent to start a university course in Educational Technology. This new course satisfies a great need which is obviously present and also prepares the way for a more comprehensive and systematic view of problems of education and instruction, as hinted above. For several reasons, Educational Planning has been given less scope than Instructional Technology. The course is intended for the growing group of people who, in various ways, are engaged in or will become engaged in one way or another in planning, construction, administration and evaluation of education and training in the public educational system and in the commercial and industrial sector, as well as in national and local government, different forms of adult education and so on.

The lay-out of the course

During the spring and autumn terms of 1968, the first course in Educational Technology will be tried out. The course is a one-year course, divided into two examination sessions. Since it was expected that many employed persons would participate in the

course, it was concentrated to periods of one week each. The whole course comprises eight such periods. The intervals between the instruction periods are devoted to practical application, studies of literature and so on.

It was clear from the beginning that a course with this technological bias cannot attain its goals unless the students are given plenty of opportunities to apply in practical work the methods they are studying and to try the different developmental phases in building and instructional system. Written reports of the practical application are required. To ensure continuity in the course, each subsequent instruction period starts with a recapitulation of the work done during the previous period as well as a survey of the literature read up to that point. During the intervals the students are given opportunities of private consultation with the teachers.

The syllabus

1. Introduction of the subject educational technology

The purpose of this introduction is to give a definition of educational technology with the help of a model, based on a systems approach (this model is to be published in the April number of the periodical Undervisningsteknologi, 1968). The principal components of this model are

(1) Education as a subsystem
(2) Educational planning
(3) Defining objectives of education (training)
(4) Determination of the criteria of instruction
(5) Construction of education, (training) including quality control
(6) Installation of educational (training) programme
(7) Administration of education (training)
(8) Evaluation of the educational (training) system.

2. Education, economy and society

Education is viewed in relation to the other functions of society (the business enterprise).

A more comprehensive and systematic way of looking at the matter is presented by the relation between the social, economic and political structure of society (or the aims of the business enterprise) and the content of instruction, as expressed in curricula and syllabuses. A survey of the educational explosion is given in global perspective. Further, a basic orientation is given of the attempts to quantify educational variables included in the so-called economics of education.

3. Special problems and investigations in the field of educational sociology

A concentrated summary is given of the extensive research performed in conjunction with the latest school reforms in Sweden. The main stress is laid on methodological problems in performing studies on working educational systems. The sociological aspects of the educational system are touched upon in conjunction with the recruitment of students to different forms of education, the flow of students through the educational system, choice of courses and vocations and so on. Sociological problems are also reflected in a discussion on the factors of importance for success in studies.

4. Educational planning

In the educational technological course, educational planning is treated at two levels: in a wider perspective— the planning of a complete system of education for a whole country— and in a narrower one— e.g. regional planning in one school district or the planning of the internal training of an enterprise.

Educational planning in the public sector is intimately connected with the economic and social planning of society in general. Technical progress, economic fluctuations, ideological trends, etc., are continuously changing the conditions of the members of society, and making revision of the educational system necessary. Increased awareness of these factors has recently led to more systematic development of models and methods for educational planning. The problems of the developing countries have also hastened this development. In addition to studies of more recent models for educational planning, the course in educational technology also includes practices

in applying the general principles to some limited problems.

This practical work may be the evaluation of certain parts of an established system of education, detailed studies of a well-documented project for a developing country, regional planning, the prediction of the need for a certain type of teacher, and the like.

The section concerned with training in enterprises deals with important analyses and decisions which follow when it is found that the results of the activities of an enterprise or institution have not reached the level intended. The course shows how to analyse a problem in order to determine whether it is concerned with human engineering, motivation, task requirements, selection or training. The role of education in connection with personnel planning is also discussed. Another item is how choice of measures is affected by such restrictions as economic resources, time, students, etc. The possibilities of practising power of judgement in these questions are provided for by practical application.

5. Methods of determining objectives of education

This item is concerned with giving prospective educational technologists the knowledge and skills required to collect, compile, evaluate and report the data needed in analyses of educational and training objectives.

Distinction is made between defining training objectives for definite professions and posts on the one hand, and on the other analysis of the demands made on knowledge and skills needed in the public sector. In addition to studying and exercising different methods of collecting data, more coherent field work are also included.

In this work the students are given opportunities of practising all the essential phases of the analysis of educational and training objectives: choice of methods, collection of data, evaluation and reporting. The product of this work is then used in the subsequent practical application in transferring the objectives to

instructional criteria, and the construction and sequencing of instruction.

6. Determination of instructional criteria

The next step in this course makes the students familiar with the translation of the performance requirements determined in the analysis of objectives into training needs, and the structuring and sequencing of the actual course of instruction. Knowledge of learning psychology is essential in this work. Most of this knowledge the students acquire from the textbooks of the course.

Instruction and practice stress considerations in connection with the determination of training needs breaking these down into subgoals, sequencing, prescribing learning content and so on. The work leads to the drawing of a flow-chart of the course of instruction, a so-called programme instrument, and a testing instrument based on the earlier derived instructional criteria.

7. Pupil/trainee analysis

It was intended originally, within the framework of the course, to give prospective educational technologists basic skills in psychological investigation techniques. This soon proved impossible, however, owing to the short time allotted to the item, Pupil/trainee analysis. The scope of this item was therefore reduced to an orientation of the intellectual and social development of the individual, with special attention to the rise of individual differences and their importance for the design of the educational and training programme. A special section is devoted to learning capacity and achievement in adults.

The exercises describe, in the first place, the work of industrial and educational psychologists, in order to define the services these specialists can offer the educational technologists in their future work.

8. Media-methods, choice and design

It is in this section that the direct design of sequences of instruction is dealt with. The relation between choice of instructional methods/presentation media, the students prerequisite qualifications and the objectives of instruction are discussed. After studying different forms of instruction, learning activities and presentation media, the students themselves construct sequences with the material produced in the earlier practical exercises.

9. Evaluation

Two types of educational quality control are included in this item. One of these refers to the tests set to check whether instruction has led to the goals (criteria) set up. This is called internal evaluation. The other type of evaluation, the external, implies that the educational system as a whole is tested in respect of the needs which gave rise to its creation, i.e. a validity control of the criteria of education determined after the basic analysis.

Different methods of educational measurement are studied, such terms as reliability and validity are discussed and the students devote part of the time to test construction. The educational significance of marks is debated.

10. Counseling and vocational guidance

The purpose of this item is to make the students aware of the situation of the individual pupil in an educational system. The intention is to give the students the view that the task of pupil welfare programmes is to initiate and consolidate the pupils' motivation. In the construction of smaller educational systems, too, and organisation must be included to guide the pupils in the best way through the system on the basis of their special qualifications and situations. For the individual pupil the educational system is only one part of his existence, and the educational technologist has, in the construction of this system, to elucidate and take into consideration relations to other matters of vital interest for the pupil.

11. Educational and personnel administration

The efficiency of education can be increased by rational educational and personnel administration. By regarding the administrative unit (the school, education department) from the angle of business economics, the educational technologist can more easily take steps in the direction of rationalisation. For this, knowledge of business organisation, educational economics, supervision of work, personnel service, etc., is required. Within the framework of the course in educational technology, these subjects can only be touched upon cursorily, but the prospective educational technologist is informed of the possibilities of specialist consultations in these problems.

12. Planning scientific investigations, and statistics

During the work of planning, construction, administration and above all the evaluation of educational systems, the demand for scientific methods is always present. The future educational technologists must therefore be trained in the design of experiments and in discernment in the choice of statistical methods. Knowledge of basic statistical concepts, terminology and methods is also necessary to understand the literature of the empirical research, on which the educational technologist depends in his daily work.

13. Educational technology: Application and integration

The greater part of the second term is devoted to the students' work on their own educational or training projects, in which the knowledge and skills acquired earlier are to be applied and integrated. As far as possible this field work will satisfy two criteria: the results of the work should as far as possible be practically useful, and the project should preferably include all the developmental phases in educational technology dealt with in the course.

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Not all the works listed below have been officially authorised by the faculty. Additions and alterations may therefore be made.

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